

CLAIMS

1. An activation energy ray-sensitive resin composition, characterized in that said composition comprises:
 - 5 a dispersion comprising an aqueous solution of a water-soluble resin, and an acid former generating an acid by the action of activation energy rays and being insoluble or sparingly soluble in water, said acid former being dispersed in said aqueous solution in the form of
10 fine powder, and
an acid-reactive insolubilizing agent dissolved or dispersed in said dispersion and insolubilizing said water-soluble resin by the action of said acid.
 - 15 2. An activation energy ray-sensitive resin composition, characterized in that said composition comprises:
a dispersion comprising an aqueous solution of a water-soluble resin, an acid former generating an acid by the action of activation energy rays and being insoluble
20 or sparingly soluble in water, and a sensitizer sensitizing the acid forming reaction, said aid former and sensitizer being dispersed in said aqueous solution in the form of fine powder, and
an acid-reactive insolubilizing agent dissolved or
25 dispersed in said dispersion and insolubilizing said water-soluble resin by the action of said acid.
 - 30 3. An activation energy ray-sensitive resin composition as recited in claim 1 or 2, characterized in that a compound having at least one radically polymerizable unsaturated bond is dissolved or dispersed.
 - 35 4. An activation energy ray-sensitive resin composition as recited in any one of claims 1 through 3, characterized in that said acid-reactive insolubilizing agent is an N-

methylolated or N-alkoxymethylated nitrogen-containing compound, a hydroxymethylated phenol derivative or a resol resin.

5 5. An activation energy ray-sensitive resin composition as recited in any one of claims 1 through 3, characterized in that said acid-reactive insolubilizing agent is a compound having at least one epoxy group, oxetane group, vinyloxy group, isopropenyloxy group or orthoester group.

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6. An activation energy ray-sensitive resin composition as recited in any one of claims 1 through 3, characterized in that said acid-reactive insolubilizing agent has at least one formyl group.

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7. An activation energy ray-sensitive resin composition as recited in any one of claims 1 through 3, characterized in that said acid-reactive insolubilizing agent has at least one acetal group.

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8. An activation energy ray-sensitive resin composition as recited in any one of claims 1 through 7, characterized in that an aqueous resin emulsion is mixed.

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9. An activation energy ray-sensitive resin composition comprising the activation energy ray-sensitive resin composition as recited in any one of claims 1 through 8, and a water-soluble, photo-insolubilizable resin.

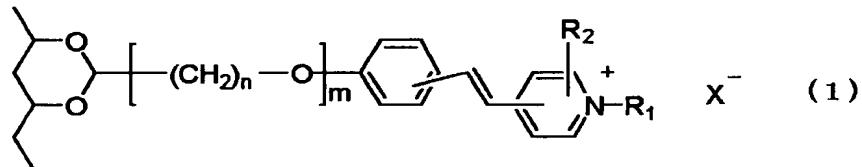
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10. An activation energy ray-sensitive resin composition as recited in any one of claims 1 through 9, characterized in that said water-soluble, photo-insolubilizable resin is a photo-crosslinkable polyvinyl alcohol into which a styrylpyridinium group represented by the following

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general formula (1) has been introduced:

No. 3



wherein R₁ represents a hydrogen atom, an alkyl group or an aralkyl group, R₂ represents a hydrogen atom or a lower alkyl group, X⁻ represents a halogen ion, a phosphate ion, a p-toluenesulfonate ion or a mixture of these anions, m is a number of 0 or 1 and n is an integer of 1 to 6.

11. An activation energy ray-sensitive resin composition as recited in any one of claims 1 through 9, characterized in that said water-soluble, photo-insolubilizable resin comprises polyvinyl alcohol, casein or gelatin, and a water-soluble diazo resin or a dichromate.

12. An activation energy ray-sensitive resin film characterized in that an activation energy ray-sensitive resin composition according to any one of claims 1 through 11 is formed into a film.

13. An activation energy ray-sensitive resin film for screen printing process, characterized in that an activation energy ray-sensitive resin composition according to any one of claims 1 through 11 is formed into a film.

14. A pattern forming method characterized in that an activation energy ray-sensitive resin film according to claim 12 or 13 is irradiated with activation energy rays, the resulting film being developed with water optionally after having been heat-treated for facilitating the acid-catalyzed insolubilization reaction.